THE UNIVERSITY OF BRITISH COLUMBIA

REPORT TO THE BOARD OF GOVERNORS
Agenda Item #4.8

SUBJECT	**ENDOWMENT SPENDING RATE REVIEW**
MEETING DATE	**DECEMBER 6, 2016**
APPROVED FOR SUBMISSION	Forwarded to the Board of Governors on the Recommendation of the President Santa J. Ono, President and Vice-Chancellor
DECISION REQUESTED	**IT IS HEREBY REQUESTED that** ***the Board of Governors approve in principle an increase to the endowment spending rate from 3.5% to 4% for fiscal year 2017-2018. This is subject to review by the incoming CEO of IMANT.*** ***It is recommended that final approval for implementation of this change be delegated to the Chairs of the Finance Committee and Audit Committee of the Board of Governors.***
Report Date	October 29, 2016
Presented By	Andrew Simpson, Vice-President Finance & Operations Peter Smailes, Treasurer Ian Burgess, Comptroller

EXECUTIVE SUMMARY

In accordance with Endowment Management Policy No. 113, the Endowment spending rate is reviewed every three years to ensure the value of the endowments are maintained over time. UBC Investment Management Trust ("IMANT") commissioned Aon Hewitt in the Fall of 2015 to perform an update of the Asset Mix Optimization study for the UBC Endowment Fund. At its February 2, 2016 meeting, the Board of Governors approved a continuation of the spending rate of 3.5% for fiscal 2016/17 but directed the administration to bring a three-year endowment spending rate recommendation to the Board of Governors for consideration and approval within one year.

IMANT commissioned Aon Hewitt in the Summer of 2016 to assist in a review of the asset mix for the UBC Endowment Fund. The asset mix review was carried out as an iterative process that explored the potential of risk and return improvements by evaluating a series of realistic portfolios across multiple measures, rather than relying on two-dimensional return vs volatility optimization. Two additional asset classes were included; private debt and global small cap stocks. The Orchard Commons loan was also included in the analysis having been completed on August 2, 2016.

The probability of preserving intergenerational equity for the recommended portfolio under the 4% spending rate is estimated at 57% ten years into the future. This compares with a 60% probability of preserving intergenerational equity with the current asset mix and a 3.5% spending rate. Stress tests indicated that the proposed portfolio behaves similarly to the existing portfolio. The volatility of annual returns remains close to 10% indicating that the proposed asset mix real return is expected to fall between +15.1% and -5.5% in two out of three years.

The IMANT Board recommended the spending rate increase from 3.5% to 4.0%. UBC Finance supports this recommendation.

The IMANT Board also discussed the potential impact of leverage on the endowment at its September 2016 meeting. Introducing 10% leverage and investing the borrowed funds in fixed income could result in an estimated 0.4% increase in annualized 10-year returns and a 3% improvement in the probability of preserving intergenerational equity in 10 years compared to the current portfolio. Any leverage would have to be managed within the University's borrowing constraints. The IMANT Board would appreciate the UBC Board's thoughts on the introduction of leverage in the endowment.

INSTITUTIONAL STRATEGIC PRIORITIES SUPPORTED

☐ **Learning** ☐ **Research** ☐ **Innovation** ☐ **Engagement** **(Internal / External)** ☐ **International**

or ✔ **Operational**

DESCRIPTION & RATIONALE

In accordance with Endowment Management Policy No. 113, the Endowment spending rate is reviewed every three years to ensure the value of the endowments are maintained over time. The spending rate is applied on the rolling three-year average market value to determine each endowment fund's spend allocation.

UBC Investment Management Trust ("IMANT") commissioned Aon Hewitt in the Fall of 2015 to perform an update of the Asset Mix Optimization study for the UBC Endowment Fund. At its February 2, 2016 meeting, the Board of Governors approved a continuation of the spending rate of 3.5% for fiscal 2016/17 but directed the administration to bring a three-year endowment spending rate recommendation to the Board of Governors for consideration and approval within one year.

IMANT commissioned Aon Hewitt in the Summer of 2016 to assist in a review of the asset mix for the UBC endowment fund. The asset mix review was carried out under the guidance of the sub-committee of IMANT Board and IMANT Staff. The asset mix review was carried out as an iterative process that explored the potential of risk and return improvements by evaluating a series of realistic portfolios across multiple measures, rather than relying on two-dimensional return vs volatility optimization. The sub-committee considered four additional asset classes – timberlands, farmlands, private debt and global small cap stocks. Following an update from Aon Hewitt and IMANT staff, timber and farmlands were excluded for a lack of suitable investment opportunities, challenges in accessing the limited set of investments available, and moderate return expectations. The Orchard Commons loan was also included in the analysis having been completed on August 2, 2016.

Aon Hewitt undertook a projection of all key variables over a 10-year horizon under 1,000 different capital market simulations. Stress testing was also performed. The purpose of the study was to perform an update of the risk diagnosis and stress testing of the Fund's investment and spend policies by:

- Explicitly considering the Fund's underlying objectives of purchasing power preservation and the generation of a stable income flow
- Assessing if the Fund's asset mix can be modified to support a 4% spending rate

Asset Mix

The review identified an asset mix that allows the University to increase its Endowment spending rate to 4% while remaining within the overall risk profile. The recommended asset mix introduces two new asset classes – private debt and global small cap equities. Private debt is a new addition to the fixed income asset category and is meant to replace the current allocation to mortgages. Private debt has considerably different risk and return characteristics than core Canadian first mortgage investments. Global small cap equities were introduced as an asset class, thus reducing the home country bias and bringing in higher expected returns than Canadian equities.

Among the existing asset classes, the amount allocated to absolute return strategies was adjusted downward and the investment in infrastructure was increased by 2.5%. The following table shows the current asset mix as well as the asset mix recommended by IMANT:

CURRENT ASSET MIX	
	TARGET
cash	2%
mortgages	5%
bonds	13%
FIXED INCOME	20%
Canadian equities	15%
Global equities	15%
EM equities	10%
PUBLIC EQUITIES	40%
private equity	10%
real estate	10%
infrastructure	10%
Absolute Return Strategies	10%
ALTERNATIVES	40%

PROPOSED ASSET MIX	
	TARGET
cash	2%
mortgages & private debt	5%
bonds	6%
UBC debenture	7%
FIXED INCOME	20%
Canadian equities	10%
Global equities	15%
Global small cap equities	5%
EM equities	10%
PUBLIC EQUITIES	40%
private equity	10%
real estate	10%
infrastructure	12.5%
Absolute Return Strategies	7.5%
ALTERNATIVES	40%

Probability of Achieving Intergenerational Equity

The recommendation to increase the spending rate is driven by the estimate of the probability of achieving intergenerational equity. Too low of a probability indicates that current beneficiaries are drawing too much from the endowment at the expense of future beneficiaries. Too high of a probability of achieving intergenerational equity indicates that the endowment is not spend enough on current beneficiaries.

With estimates not being precise, there is a preference to err on the side of caution and a higher probability of intergenerational equity. The probability of preserving intergenerational equity for the recommended portfolio under the 4% spending rate is

estimated at 57% ten years into the future. This compares to 55% for the current portfolio under the 4% spending rate. The probability of achieving intergenerational equity by the current asset mix under the 3.5% spend rule is 60%.

Risk Measures and Stress Testing

The recommended asset mix is expected to generate average, annualized net returns of 4.4% over a 10-year period. This compares favourably to the current asset mix which would be expected to provide 4.1%. That performance is expected to bring the market value of the Endowment to slightly above $2 billion in ten years with the value of assets being at 110% of the inflation-adjusted value of the current portfolio with inflows and withdrawals. The UBC Endowment is expected to be able to generate $52 million per year in 2016 and increase to $73 million by 2026.

The proposed portfolio risk estimates remain close to the risk profile of the current policy portfolio asset mix. The volatility of annual returns remains close to 10% indicating that the proposed asset mix real return is expected to fall between +15.1% and -5.5% in 2 out of 3 years if returns were normally distributed (nominal returns are estimated to be within +17.8% and -2.9% range in 2 out of 3 years). An estimate of a severe annual loss[9] (in real return terms) is at -16.6% for the proposed portfolio compared to -16.5% for the current portfolio. Over a longer 3-year time horizon, both the current portfolio and the proposed portfolio could lose -7.9% each year for 3 years according to the severe loss measure. Stress tests indicated that the proposed portfolio behaves similarly to the existing portfolio and both are estimated to lose over 20% during a severe market crisis. The proposed portfolio is estimated to lose -22.6%; the current asset mix -21.2%.

Asset Mix Review Results

	Current Asset Mix at 3.5% spend rate	Current Asset Mix at 4% spend rate	Proposed Asset Mix at 4% spend rate
Average Net 1-year Real Return	4.5%	4.5%	4.8%
Volatility of 1-year Returns	10.1%	10.1%	10.3%
1-year Severe Loss estimate	-16.5%	-16.5%	-16.6%
3-year Severe Loss estimate (annualized)	-7.9%	-7.9%	-7.9%
Average Net 10-year Annualized Real Return	4.1%	4.1%	4.4%
Average ratio of MV / IAPC*	112%	107%	110%
Probability of preserving IE**	60%	55%	57%
Probability of 10-year RR > Spending	58%	53%	56%
Average Annual Distributions [$ million]	61	61	62
Pessimistic Annual Distributions [$ million]	45	45	45

* MV/IAPC – Market Value / Inflation-Adjusted Capital at Cost

** IE – Intergenerational Equity

Note: Net Real Return of 4.8% translates to a nominal return of 7.45% (4.8% net real return + 0.65% costs + 2% inflation)

Comparison To Peers

There are a variety of spend policies in effect at other universities in addition to UBC's moving average market value method and these include banded inflation and book value among others. The comparison to peers is not always exact but does provide a relative benchmark. The following peer spending rates were taken from publically available information.

Institution	Spending Rate	Mechanism
University of Toronto	3.7%	Opening market Value
McGill University	4.25%	Average market value
Queen's University	4.0% (target)	Hybrid formula
McMaster University	4.0%	5 year average market value
US University endowments		
- Over $1 billion	4.3%	Ending market value
- All public	4.0%	Ending market value

Leverage

During the spending rate discussions at the IMANT Board meeting the impact of a modest amount of leverage be considered. It was projected that introducing 10% leverage to the current portfolio and investing the borrowed funds in fixed income could result in an estimated 0.4% increase in annualized 10-year returns and a 3% improvement in the probability of preserving intergenerational equity in 10 years compared to the current portfolio. Further discussion on introducing leverage would

require a detailed analysis of the issues involved in the implementation of leverage but the IMANT Board wanted to obtain feedback from the UBC Board if the potential benefit of further improving the probability of maintaining intergenerational equity by an estimated 3% with 10% leverage should be pursued and is acceptable to the University. IMANT recognized that any consideration regarding leverage would have to be consistent with borrowing constraints placed on the University by the provincial government. IMANT is seeking input from the University prior to any further work on the subject of leverage.

UBC Investment Management Trust Board Recommendation

At its September 16, 2016 meeting, the IMANT Board approved a recommendation to the UBC Board of Governors to increase in the spending rate from 3.5% to 4% of the average 3-year market value of the Endowment. The 4% spending rate is net of inflation and costs, estimated at 2% and 0.65% respectively. Therefore the nominal return that is required to be generated by the Endowment assets is 6.65% per year.

Recommendation

The recommendation to the Board of Governors is that the spending rate increase to 4% for the next three fiscal years starting April 1, 2017.

BENEFITS Increasing the spending rate to 4% will provide additional revenues to support the Universities endowments.

RISKS
Financial, Operational & Reputational

An endowment spending rate that is too high will erode intergenerational equity of the fund such that future recipients receive less benefit in real dollars than current recipients. An endowment spending rate that is too low will benefit current recipients over future recipients. Lower endowment spending rates will result in fewer donations to the endowment.

There may be endowments that have healthy stabilization account balances, but the account holder does not wish to raise the spending rate. The University would prefer to keep all endowments at the same spending rate with the exception of those that have very significant stabilization account balances or those that are underwater. With respect to addressing this issue, an endowment holder can spend less than the 4% spending rate allocation and recapitalize the unspent income. This would have the effect of reducing the spending rate to a level the account holder is more comfortable with.

UBC seeks to maintain intergenerational equity using the Canadian Consumer Price Index. The Higher Education Price Index or even the actual UBC inflation amount might be more appropriate. The Higher Education Price Index is currently at 1.8% and while a UBC price index has not been calculated, the 4% spending rate is based on a 2% inflation rate. Canadian CPI is a well understood and verifiable benchmark rate that can be easily explained to endowment beneficiaries and donors. The administration does not recommend changing the inflation benchmark at this time.

	There may be an argument that the spending rate should not be raised until the transition to the new asset mix is in place. The expected return for the endowment is 4.1% based on the current asset mix. This combined with a four-month lead-in time for IMANT to begin shifting to the new asset mix supports the recommendation to increase the spending rate on April 1, 2017.
SCHEDULE	The spending rate would be implemented on April 1, 2017
CONSULTATION	UBC Investment Management Trust UBC Treasury UBC Finance
Previous Report Date	February 15, 2016
Decision	**IT IS RECOMMENDED THAT the Board of Governors approve the endowment spending rate of 3.5% for fiscal year 2016/17. It is further recommended that a comprehensive review be undertaken jointly by IMANT and UBC Finance to generate an endowment spending rate recommendation for the following three years which will be presented to the Board of Governors within the next year**
Action / Follow Up	A comprehensive review to generate an endowment spending rate recommendation for the following three years be presented to the Board of Governors within the next year.